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## Durham Region Transit Report

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To: Durham Region Transit Executive Committee  
From: General Manager, Durham Region Transit  
Report: #2023-DRT-23  
Date: October 4, 2023

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**Subject:**

E-Mission Zero – Approval to Negotiate an Agreement for Durham Region Transit’s Electrification Infrastructure Delivery

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**Recommendations:**

That the Transit Executive Committee recommends:

- A) That a partnership framework with PowerON Energy Solutions LP (“PowerON”) (a subsidiary of Ontario Power Generation Inc.) for the engineering, procurement and construction of the Electrification Infrastructure (the “EPC Services”) and management, operations and maintenance of the Electrification Infrastructure and related services (the “O&M Services”) to support the Durham Region Transit Fleet Electrification Plan be approved in principle and such partnership framework to include:
  - i. A Principal Agreement that defines the electrification program requirements and fee structure, financial management and relationship between the parties; and,
  - ii. Supplementary Project Forms, once completed, that detail the scope of work, workplan, and cost for EPC Services and O&M Services to be provided under the Principal Agreement and would be subject to any required approvals
  
- B) That the General Manager of Transit be authorized to negotiate the Principal Agreement for the provision of EPC Services and O&M Services with PowerON and any ancillary documents, subject to the following requirements:

- i. That the initial term be for five years, with the option to renew for an additional three, five year terms, subject to compliance of terms under the Principal Agreement and future funding approvals; and,
    - ii. That the Principal Agreement align with the principles of the confidential term sheet (attached) and the partnership framework outlined in Recommendation A.
  
  - C) That the General Manager of Transit and the Treasurer report back to the Finance and Administration Committee to seek approval for the execution of the Principal Agreement, project costs and the associated financing strategy, subject to:
    - i. Approval of the partnership framework with PowerON by Infrastructure Canada (INFC) as it relates to the Region's application for funding under the Zero Emissions Transit Fund (ZETF) program;
    - ii. Approval of the Region's application for funding under the ZETF program; and,
    - iii. General terms and conditions being satisfactory to the Commissioner of Finance and the Regional Solicitor.
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## **Report:**

### **1. Purpose**

- 1.1 This report outlines the proposed strategy to deliver and manage infrastructure and energy assets required to support DRT's Fleet Electrification Plan and seeks approval to negotiate an agreement for Durham Region Transit's electrification infrastructure delivery.

### **2. Background**

- 2.1 In August 2021, the Region launched the E-Mission Durham program focused on creating a cleaner, low-carbon future by supporting and empowering Durham residents in making the transition to lower and zero emission vehicles. As part of these efforts, E-Mission Zero is DRT's commitment to adopt zero emission vehicles in its fleet to help reduce overall GHG emissions from the transportation sector in Durham.
- 2.2 DRT's E-Mission Zero strategy includes a suite of emission-reducing initiatives intended to deliver a more sustainable network of vehicles, infrastructure and facilities over the next 25 years.

- 2.3 In June 2022, Council endorsed the DRT E-Mission Zero - Fleet Electrification Plan to transition the Transit fleet vehicles to zero emission technologies by 2037, with the procurement of only electric buses starting in 2024 and referred the Plan to Durham Region Transit's long-term servicing and financing strategy
- 2.4 In the Fleet Electrification Plan, staff committed to assessing options on the procurement approach for infrastructure upgrades and energy services by considering best value in total cost of ownership and operational efficiencies. Staff recommended that DRT focus on operating buses and investigate options to outsource the delivery of infrastructure upgrades and operations and maintenance of charging infrastructure.
- 2.5 On March 1, Council approved the Transit Service and Financing Strategy (2023 – 2032), which identified projected investment needs for the electrification plan within the broader context of Transit's comprehensive capital and operating pressures over the next 10 years.
- 2.6 In March 2023, Durham Region executed a credit agreement with the Canada Infrastructure Bank (CIB) for up to \$62 million in low interest debt financing for the purchase of 98 electric buses.
- 2.7 In April 2023, staff submitted an application to Infrastructure Canada, under the Zero Emissions Transit Fund (ZETF), seeking federal funding to support the Fleet Electrification Plan. Staff have not yet received feedback on the approval status and there is uncertainty around the scale and timing of funding approvals. Under the ZETF program, capital implementation contracts must be awarded in a way that is fair, transparent, competitive and consistent with value-for-money principles for related costs to be eligible for funding. Exemptions from competitive awarding of contracts could be considered by Infrastructure Canada on a case-by-case basis, upon receipt from the applicant of a written request noting business case rationale, in advance of the contract being awarded. Eligible expenses for approved ZETF projects or initiatives must be submitted by March 2026.

### **3. Previous Reports and Decisions**

- 3.1 In November 2019, Regional Council approved a pilot program for the purchase of up to eight (8) electric buses and associated charging infrastructure at a total cost of \$10.1 million, to be financed from a one-time incremental Canada Community-Building fund allocation (previously known as Federal Gas Tax funds ([Report #2019-COW-31](#))). This pilot allows for the assessment of battery electric bus and

charging technology, including its performance in local conditions to inform the long-term fleet transition and deployment.

- 3.2 In September 2021, the Transit Executive Committee received a report titled E-Mission Zero – Towards Zero Emission Public Transit in Durham Region ([Report #2021-DRT-21](#)), which provided an overview of DRT’s commitment to transition to zero GHG emissions by advancing a coordinated suite of initiatives supporting the assessment and deployment of clean technologies aimed at reducing GHG emissions from public transit in Durham.
- 3.3 In November 2021, Council approved the proposed strategy to implement DRT’s Electric Bus and Charging Infrastructure Demonstration Pilot ([Report #2021-DRT-28](#) and [Report #2021-F-30](#)) including approving an additional \$2.0 million from one-time Canada Community-Building funds to increase the total approved financing to \$2.9 million for the supply of electric bus charging equipment from Oshawa Power and Utilities Corporation and \$0.1 million in one-time Canada Community-Building funds to finance the design and construction of facility upgrades to be performed by eCamion necessary to implement integrated charging and energy storage equipment.
- 3.4 In February 2022, Regional Council received the 2021 Annual Corporate Climate Change Action Plan Update ([Report #2022-COW-3](#)), which included an update on DRT’s 2020 GHG inventory and the short-term reduction forecast
- 3.5 On June 29, 2022, Regional Council endorsed the E-Mission Zero - DRT Fleet Electrification Plan ([Report #2022-DRT-10](#) and [Report #2022-F-16](#)) and referred the plan to Durham Region Transit’s long-term servicing and financing strategy to be presented in advance of the 2023 Business Plans and Budget.
- 3.6 On March 1, 2023, Regional Council approved the Transit Service and Financing Strategy (2023-2032) ([Report #2023-F-5](#))

#### **4. Fleet Electrification - Program Status**

- 4.1 DRT currently has a Council approved pilot project underway, with its first 6 electric buses ordered and expected for delivery in April 2024. It also has an agreement in place with Oshawa PUC Energy Services (OPUCES) for the design and build of charging infrastructure (with a subsequent operations and maintenance agreement to follow), to support these buses. This project is currently at the 90% design stage.

- 4.2 To support the scale-up in electrification of the transit fleet, there are further infrastructure upgrades, depot retrofits, charging equipment and energy systems (the “Electrification Infrastructure”) required at the existing DRT depots.
- 4.3 The traditional project delivery model (design-bid-build) poses significant challenges for transit electrification due to the unique complexities and long-term nature of the projects.
- 4.4 As such, staff investigated alternative project delivery models to deliver electrification infrastructure and maximize the benefits of transitioning to a zero emissions fleet.

	Design-Bid-Build <sup>1</sup>	Design-Build <sup>2</sup>	Design-Build-Operate-Maintain <sup>3</sup>	Energy-as-a-Service <sup>4</sup>	DRT-PowerON: Framework for Agreement <sup>5</sup>
Schedule	—	+	+	+	+
Early Cost Certainty	—	+	+	+	+
Price (Capital Costs)	+	+	O	O	O
Opportunity to Optimize Life Cycle Costs	—	—	+	+	+
Owner Control	+	—	—	—	+
Owner Risks	—	+	+	+	+
Overall Flexibility	—	+	O	—	+

Table 1: Comparison of Alternative Project Delivery Models

Advantages (+), Disadvantages (-), No Significant Difference (O)

<sup>1</sup> Multiple entities responsible for project delivery, managed under separate contracts by owner. One for the architect/engineer and one for the builder. O&M is handled separately  
<sup>2</sup> A single entity responsible for both the design and construction of the project. O&M is handled separately  
<sup>3</sup> A Single entity is responsible for the entire project lifecycle, including design, construction, operation, and maintenance  
<sup>4</sup> An energy service provider develops, finances, installs, and operates the energy infrastructure on behalf of the owner. The owner pays for the energy consumed or the services provided, rather than investing Capital upfront in infrastructure development.  
<sup>5</sup> Similar to the design-build-operate-maintain model, however the framework for agreement model allows for delivery and O&M with multi-phase, multi-year projects, providing the owner additional control and flexibility in a collaborative environment

4.5 Following consideration of the advantages and disadvantages of each model to best support the business needs of the Region and operational requirements of DRT, the Framework for Agreement model is recommended.

## **5. Electrification Infrastructure Delivery – Framework for Agreement**

5.1 DRT received a proposal for turnkey Electrification Infrastructure services from PowerON Energy Solutions “PowerON”, a wholly owned subsidiary of Ontario Power Generation (OPG). The proposal indicated that PowerON will partner with Oshawa PUC Energy Services (OPUCES), and Elexicon Group (Elexicon) – energy services companies, which are wholly owned subsidiaries of Oshawa PUC, and Elexicon Corporation, respectively to deliver the turnkey services.

5.2 Under the proposal, the parties would enter into a Principal Agreement, with negotiated key principles that will be used to deliver the services, providing DRT a structured and strategic approach to deliver the electrification program in multi-phases, over a long-term horizon (15+ years), that are aligned with the bus procurement schedule and other business needs.

a. The Principal Agreement defines the services, roles, responsibilities, fee structure and other commercial terms that allow the parties to work together in an efficient manner over the long-term duration of fleet electrification

b. As project work is required (and requested) by DRT, a subsequent work agreement (Project Form), supplementary to the Principal Agreement, will be developed to define the scope of work, deliverables, and cost for work. The Principal Agreement regulates the work agreements, eliminating the need to negotiate additional contracts

5.3 This partnership framework with PowerON is both innovative in its approach while still ensuring that the procurement process is competitive and achieves value for money.

a. PowerON has established and operates the only active Vendor of Record (VOR) program for transit electrification equipment and services in Canada. The VOR was established via an open RFP competition process and uses multiple per-qualified vendors for each major item typically required for electrification projects, providing favourable terms for schedule reliability, supplier liability, warranty, and volume price discounts

- b. PowerON is bound by and complies with the Ontario Broader Public Sector Procurement Directive (BPS Directive), ensuring the VOR program utilizes an open, transparent and fair procurement process, allowing the Region to meet its municipal purchasing obligations
  - c. Pending negotiation of the Principal Agreement, approximately ninety percent (90%) of the capital payments to PowerON under this agreement will flow through to suppliers, using competitively procured equipment and services under PowerON's VOR framework
- 5.4 This model is aligned with the collaborative spirit of the partnership framework, offering the Region benefits with respect to transparency on actual costs for the services:
- a. A cost-plus pricing model will be used to deliver the services, with open-book accounting, flow through of costs of equipment and services, and pre-determined contingency and service fees on top of the costs
  - b. The model provides an opportunity for shared savings among the parties to optimize total cost of ownership for DRT
- 5.5 This arrangement is of a sole source nature because PowerON is uniquely positioned to provide these services efficiently, while allowing the Region to comply with its public procurement requirements through use of PowerON's existing VOR, which is only available to PowerON partners. The Region of Durham's Purchasing By-law #16-2020, Sec. 7.2 Limited tendering (sole/single source purchases) permits the acquisition of goods and services through limited tendering under specific circumstances outlined in Appendix "C" of the By-law. Section 1.1 of Appendix "C" permits sole source purchases where the goods or services can be supplied only by a particular supplier and no reasonable alternative exists.
- 5.6 There are inherent risks of pursuing a traditional model versus this arrangement with PowerON:
- a. With traditional models, DRT would retain risks such as delivery and performance risk, integration risk, and risks related to the operations and maintenance of the equipment
  - b. This arrangement is expected to significantly mitigate risks related to implementation timing (March 2026), critical to Zero Emissions Transit Fund

(ZETF) funding eligibility. Additionally, leveraging the expertise of PowerON will also greatly enhance DRT's capacity to implement the Electrification Infrastructure

- c. Electrification Infrastructure is required at the DRT depots prior to accepting additional electric buses, and as such, this arrangement supports the bus delivery timeframes contemplated under the approved CIB financing program
- d. Staff estimate that a traditional model could delay implementation timing by 12-18 months, which could potentially risk up to \$25 million in electrification infrastructure project costs, including up to \$12.5 million in unapproved ZETF grant funds, provided extensions were not granted
- e. The traditional project delivery model favours short term requirements, and lacks the flexibility in contract management, versus long-term considerations with Electrification Infrastructure and evolving solutions, including effective integration and asset management requirements
- f. There would be limited opportunity to optimize life cycle costs and realize cost savings

### Scope of Services

- 5.7 PowerON will act as a prime contractor for DRT, holding responsibility and partial contractual risk for delivering the EPC Services and O&M Services to support electrification at DRT's bus depots and future en-route terminals/stations. Responsibilities include, but are not limited to:
- a. Design, purchase, and construction of the Electrification Infrastructure as per DRT's requirements
  - b. Asset management, operations, and maintenance services to strategically manage, monitor, operate, repair and maintain the Electrification Infrastructure during the term of the Principal Agreement
  - c. The O&M Services includes some optional services available to DRT, such as Global Adjustment (GA) Services<sup>6</sup>, Clean Fuel Regulation Credit Reporting<sup>7</sup> and Independent Electricity System Operator (IESO) Services<sup>8</sup>, the terms of which will

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<sup>6</sup> Management of the Electrification Infrastructure to reduce DRT's electricity cost (mitigate peak demand charges and global adjustment costs)

<sup>7</sup> Clean Fuel Regulation credit reporting, aggregation, and sales

<sup>8</sup> Leveraging energy assets to generate market revenues for Demand Response, Operating Reserve, Capacity, and other ancillary services and any successor programs; and sale of electricity if applicable from Electrification Infrastructure to the IESO market

be evaluated by the Region and if beneficial, further negotiated under the Principal Agreement

- 5.8 PowerON has executed a teaming agreement with Enerforge and Elexicon Group to deliver some of the services within the territories of Oshawa Power Utilities Corporation (OPUC) and Elexicon Energy respectively. Services contemplated include:
- a. Project management of any required utility upgrades or connections at project sites
  - b. Maintenance of all Electrification Infrastructure
  - c. Construction and maintenance of any solar photovoltaic (PV) installations at DRT facilities, at the Region's sole discretion

#### Benefits

- 5.9 This collaboration brings the expertise of entities in energy infrastructure development, public ownership, potential co-investment, and profit reinvestment into the Region. By leveraging these advantages, this framework for agreement model becomes more compelling for efficient and sustainable infrastructure delivery.
- 5.10 Engaging a single agent responsible for design, procurement, construction management, delivery, and O&M services ensures streamlined delivery, communication, effective resource management, and efficient project execution.
- 5.11 By including O&M services within the model, PowerON can ensure continuity through design and construction for long term maintenance considerations of the infrastructure.
- 5.12 Through the asset management services, PowerON can optimize life cycle costs by monitoring and adapting assets over time. Identifying operational efficiencies provides the opportunity to extend asset lifespan, improve performance and minimize long term costs.
- 5.13 The Vendor of Record program offers economic benefits such as cost savings through bulk purchasing, streamlined procurement and an expedited project schedule that aligns with implementation timelines of funding and financing programs.

- 5.14 The model allows the Region to access specialized resources to manage the program in a collaborative manner, with control in the early project phases, maximizing flexibility, transferring risk, and optimizing for cost and schedule.
- 5.15 As the energy services companies are owned by public agencies, the partnership ensures a strong sense of accountability to the Region and its residents. The companies have a vested interest in delivering successful projects and maximizing public value.

### Implementation Considerations

- 5.16 Develop robust monitoring and evaluation mechanisms to track project progress, performance, and adherence to contractual obligations.
- 5.17 Divide the program into manageable phases that align with funding availability, priority areas, and logical sequencing of work.
- 5.18 Conduct a thorough risk assessment to identify potential risks and develop mitigation strategies.
- 5.19 Foster effective stakeholder engagement and communication channels.
- 5.20 Please refer to the attached confidential term sheet that provides an overview of the key principles that will be followed for negotiations.
- 5.21 Legal Services, Finance and the Works department were consulted through this process, and they agree with the recommendations.

## **6. Financial Implications**

- 6.1 Following approval, staff will initiate negotiations with PowerON, in alignment with the principles detailed in Attachment #1. As part of this process, cost assumptions will be reviewed and verified for the services under the Principal Agreement for the initial term.
- 6.2 Upon approval of the Region's application for funding under the ZETF program; and approval of the partnership framework by Infrastructure Canada (INFC) and successful negotiations with PowerON, staff will report back to the Finance and Administration Committee for approval of the estimated costs and associated

financing strategy and seek approval for execution of the Principal Agreement with PowerON.

- 6.3 Regional staff have initiated discussions with Infrastructure Canada to ensure a negotiated agreement with PowerON will be aligned with the ZETF program requirements.

## **7. Operational Considerations**

- 7.1 Software and control systems will play a critical role in management and operations of the Electrification Infrastructure, enabling bus and equipment to be integrated into the existing system for maximum operational efficiencies.
- 7.2 Staff will work closely with the Works – Facilities department as stakeholders during the implementation of this program. These Electrification Infrastructure upgrades, operations and maintenance will require detailed planning and phasing of work, since the depots are active Operational sites.
- 7.3 Through this collaborative approach, Regional staff have the opportunity to learn, and receiving training and support in a low-risk environment, to safely expand responsibilities over time should we choose to do so.

## **8. Relationship to Strategic Plan**

- 8.1 This report aligns with/addresses the following strategic goals and priorities in the Durham Region Strategic Plan:
- a. Environmental Sustainability
- Goal 1.1 - Accelerate the adoption of green technologies and clean energy solutions through strategic partnerships and investment
  - Goal 1.4 - Demonstrate leadership in sustainability and addressing climate change
- b. Economic Prosperity
- Goal 3.4 - Capitalize on Durham's strengths in key economic sectors to attract high-quality jobs

## **9. Next Steps**

- 9.1 Upon approval of recommendations contained in this report, Staff will:

- a. Proceed into discussions with PowerON and establish commercial terms for the Principal Agreement based on the fundamental principles of the Term Sheet to the satisfaction of the General Manager of Transit, the Commissioner of Finance and the Regional Solicitor.
- b. Review and verify cost assumptions for the services under the Principal Agreement for the initial term. Upon approval of the Region's application for funding under the ZETF program, INFC approval of the partnership framework and successful negotiations, staff will report back to the Finance and Administration Committee to seek approval of the project costs, financing strategy and execution of the Principal Agreement with PowerON.
- c. Work with the Corporation communications team on further engagement opportunities (internal and external) on eMission Zero – Fleet Electrification
- d. Prepare for the purchase of an additional 22 electric buses in Q4, 2023 to be delivered for 2025

## **10. Conclusion**

- 10.1 Approval of the recommendations enables DRT to take the next steps towards electrification of the transit fleet
- 10.2 By embracing this collaborative approach, the Region can achieve an integrated, efficient, and sustainable infrastructure to support the fleet electrification program as new technologies quickly evolve over the next 20 years.
- 10.3 For additional information, contact: Kris Hornburg, Deputy General Manager, Business Services, Durham Region Transit, at [kris.hornburg@durham.ca](mailto:kris.hornburg@durham.ca) or 905-683-4111

## **11. Confidential Attachment**

Attachment #1 – Term Sheet

Respectfully submitted,

Original Signed By:

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Bill Holmes  
General Manager, DRT

Recommended for Presentation to Committee

Original Signed By:

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Elaine C. Baxter-Trahair  
Chief Administrative Officer